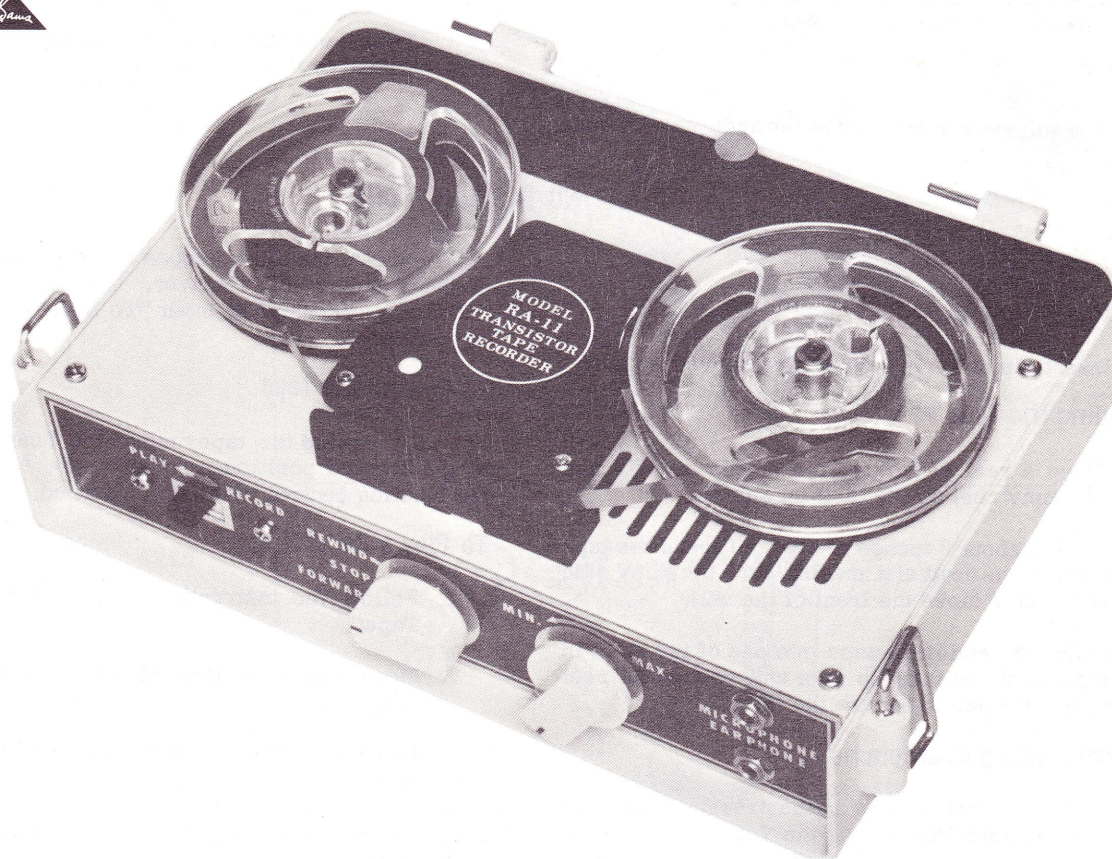
STAR-LITE MODEL
RA-11STAR-LITE MODEL
RA-11

GENERAL INFORMATION

The Star-Lite Model RA-11 is an all transistor, battery-operated, two-track portable tape recorder.

The amplifier is powered by one 9-volt battery and the motor is powered by two 1 1/2-volt batteries.

The transport has one speed for playback and recording.

Supplied By:

Star-Lite Merchandise Company
37 West 23rd Street
New York 10, New York

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ511

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FUNCTION OF CONTROLS

FUNCTION CONTROL

The function control selects the modes of operation: Rewind, Forward, and Stop.

VOLUME

The volume control varies the audio level during

playback and recording level when recording.

PLAY-RECORD

Turn the switch to the left to play back recorded material and to the right to record.

OPERATING INSTRUCTIONS

Preparing for Operation

1. Remove the lid.
2. Insert the batteries, observing correct polarity.

Threading the Tape

1. Place a reel of tape on the supply spindle and an empty reel on the take-up spindle.
2. Unwind about 8 inches of tape. Thread the tape through the head slot making sure the shiny side of the tape faces the front of the unit.
3. Insert the end of the tape into one of the slots in the hub of the take-up reel and rotate the reel several times to secure the tape.

To Record with a Microphone

1. Thread a reel of tape on the transport as described under "Threading the Tape".
2. Insert the microphone plug in the microphone jack.
3. Place the Play-Record switch in the Record position.
4. Using the earphone to monitor, rotate the volume control to its mid-position. The volume may be decreased or increased as recording conditions vary. Move the function control to the Forward position and begin the recording.

To Make Dual-Track Recordings

When one side of the tape is completed, remove the full reel of tape from the take-up spindle and place it on the supply spindle. Place the empty reel on the take-up spindle. Thread the tape as described under "Threading the Tape" and continue recording.

To Make a Recording from Radio or TV Receiver

Using a patch cord with alligator clips on one

end, connect the clips across the speaker voice coil of the radio or TV receiver. Continue to make the recording as described under "To Make a Record with Microphone".

To Rewind the Tape

To rewind the tape, move the function control to the Rewind position. To stop tape rewind, move the function control to the Stop position.

To Play a Recording

1. Follow the instructions under "Threading the Tape".
2. Move the Play-Record switch to the Record position.
3. Move the function control to the Forward position.
4. Adjust the volume control to desired listening level.
5. To stop tape transport, move function control to the Stop position.

To Edit and Splice Tape

NOTE: Since one track cannot be edited and spliced without affecting the other track, recordings to be edited should be limited to one track recordings only.

1. Tape may be edited by cutting out unwanted portions or by joining selections into another sequence. Unused sections can be spliced for reuse.
2. For best results, cut tape at a slight diagonal, join ends with splicing tape on the glossy side. Trim off any excess width.

DISASSEMBLY

1. Remove the lid from the unit.
2. Remove the head cover by removing the two cover screws.
3. Remove the four screws, one in each top corner,

holding the transport in the case.

4. Carefully lift the transport up out of the case.
5. To reassemble, reverse the foregoing procedure.

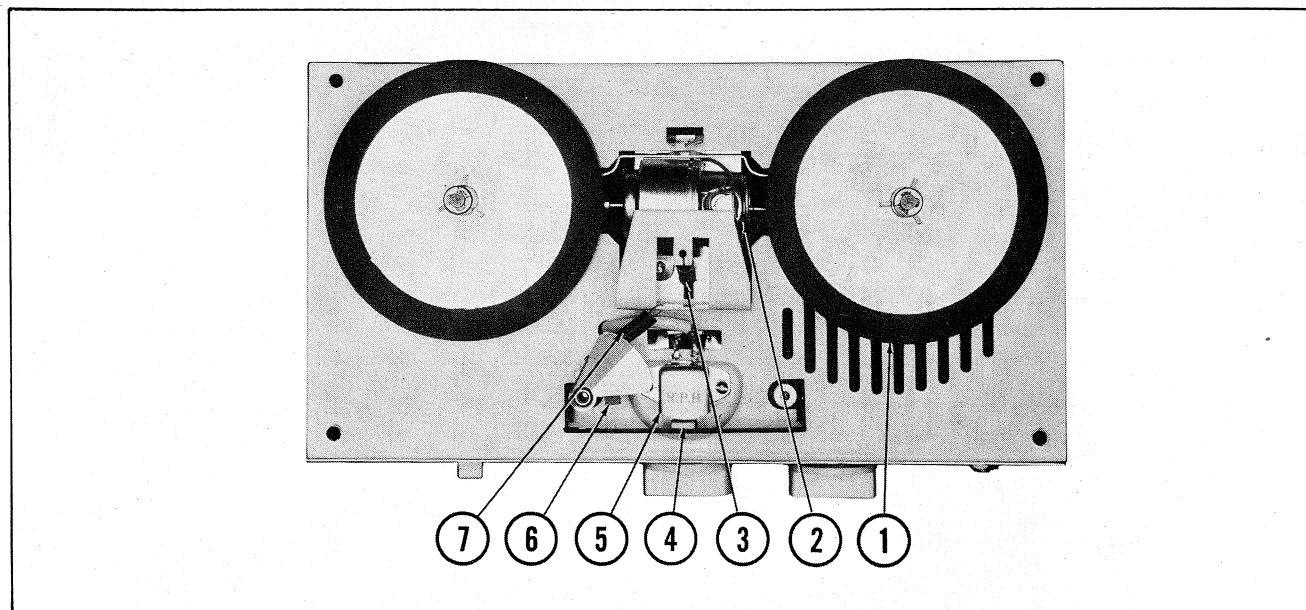


FIG. 1 TOP VIEW OF MECHANISM WITH COVERS REMOVED

CLEANING

As the unit is used, a coating of tape oxide builds up on the head surface. This coating reduces efficiency of the unit and must be removed to insure proper operation. Remove the coating using a soft cloth dampened with alcohol.

LUBRICATION

Occasionally remove the spindles by removing the spindle retainer clips and clean the spindle shafts and lubricate the shaft with a light grease. Do not lubricate the motor bearings.

HEAD AZIMUTH ADJUSTMENT

Thread a prerecorded tape on the transport. Remove the head cover. Place the unit in operation

and adjust the head adjustment screws until maximum high-frequency response is obtained.

TROUBLE CHART

Symptom	Cause	Remedy
Transport does not operate in any mode.	1. Motor batteries dead. 2. Defective motor (2). 3. Broken lead to battery container. 4. Motor tension spring (3) broken or disconnected.	1. Replace batteries. 2. Replace motor (2). 3. Replace broken lead. 4. Connect or replace spring (3).
Transport will not rewind.	1. Drive surface of supply spindle has oil or grease on it.	1. Clean and replace supply spindle. Clean motor shaft.
No Take-up.	1. Oil or grease on drive surface of take-up spindle.	1. Clean motor shaft and driving surface of take-up spindle.
Incomplete or no erase.	1. Erase magnet return spring (7) broken or disconnected.	1. Connect or replace spring (7).

MECHANICAL PARTS LIST

Ref. No.	Description	Ref. No.	Description
1	Reel Turntable	5	Record-Playback Head
2	Motor	6	Erase Magnet
3	Motor Tension Spring	7	Spring
4	Pressure Pad	8	Motor Shift Bracket

ELECT. PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA		NOTES
			RCA PART No.	RAYTHEON PART No.	
X1	2SB175B 2SB171* 2N215*	AF Amplifier	2N406	2N362	PNP
X2	2SB175B 2N215*	AF Amplifier	2N406	2N362	PNP
X3	2SB176 2N217*	Output	2N408	2N631	PNP

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		Star-Lite PART No.	REPLACEMENT DATA					
	CAP.	VOLT.		AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
C1	5	10		PTT37	NLW5-15	MT1-3	TT12X5	MLV5-12	TE-1127
C2	5	10		PTT37	NLW5-15	MT1-3	TT12X5	MLV5-12	TE-1127
C3	5	10		PTT37	NLW5-15	MT1-3	TT12X5	MLV5-12	TE-1127
C4	5	10		PTT37	NLW5-15	MT1-3	TT12X5	MLV5-12	TE-1127
C5	5	10		PTT37	NLW5-15	MT1-3	TT12X5	MLV5-12	TE-1127
C6	10	6		PTT23	NLW10-6	MT1-5	TT6X10	MLV10-6	TE-1087
C7	30	10		PTT43	NLW30-15	MT1-14	TT15X30	MLV40-12	TE-1158

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMenco PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	.02		BPD-02	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C9	.02		BPD-02	DA-203	H-05S2	CCD-203	TA-120	TG-S20
C10	.04		BPD-05	DA-503	H-05S5		TA-150	TG-S50

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Star-Lite PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume	5000Ω		B-11, or (AB-11)		Q13-114	UI2, or (UA53A, SK-1000)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R2	10K				R9	40K			
R3	100K				R10	60K			
R4	10K				R11	20K			
R5	100Ω				R12	10Ω			
R6	50K				R13	25K			
R7	10K				R14	200Ω			
R8	5000Ω								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Star-Lite PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	800Ω	6-8Ω						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Star-Lite PART No.	QUAM PART No.	
SP1	2"x 3"	PM	6-8Ω			

BATTERIES

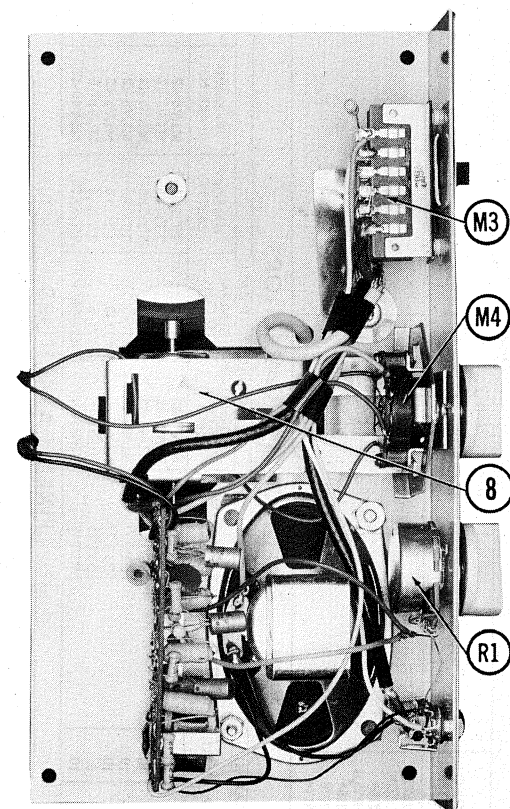
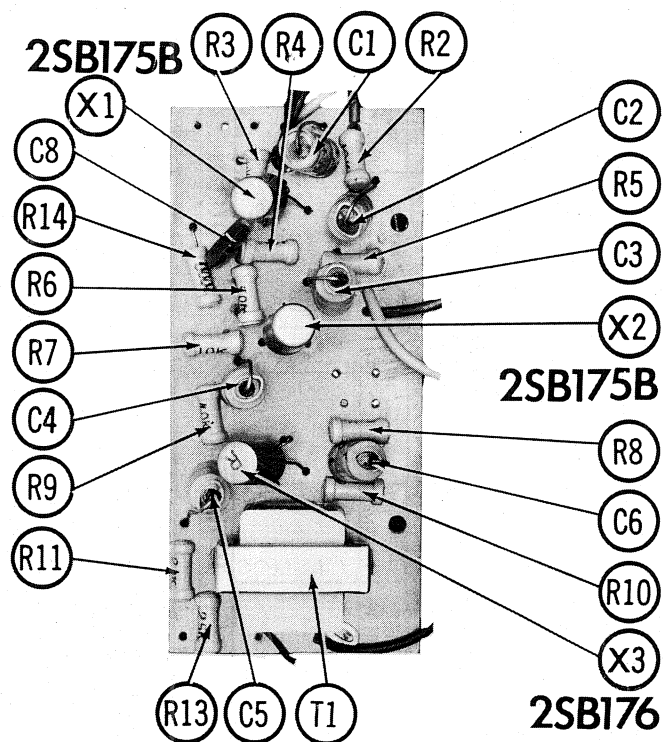
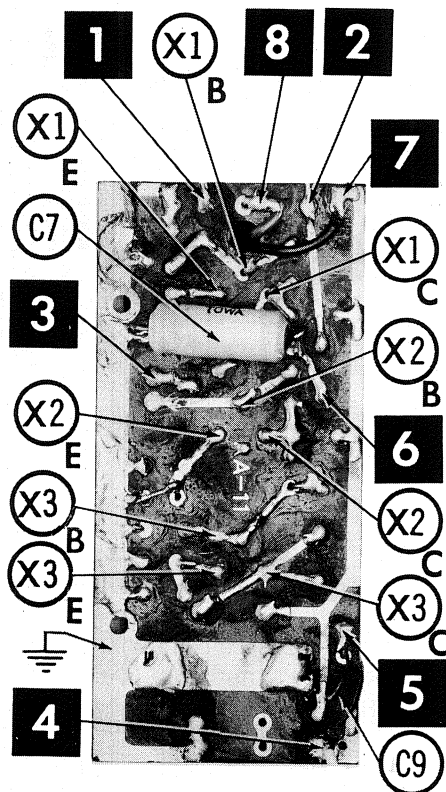
ITEM No.	VOLTAGE	Star-Lite PART No.	REPLACEMENT DATA				NOTES
			BURGESS "A"	EVEREADY "A"	"B"	MALLORY "A"	
M1	9V			2U6		216	Amp. Supply Motor Supply, 2 Required
M2	1½V	UM-2		130		635	

MISCELLANEOUS

ITEM No.	PART NAME	Star-Lite PART No.	NOTES
M3	Switch		Play-Record (2 Position Slide Type) Rewind-Stop-Forward (Rotary Wafer Type)
M4	Switch		

WIRING DATA

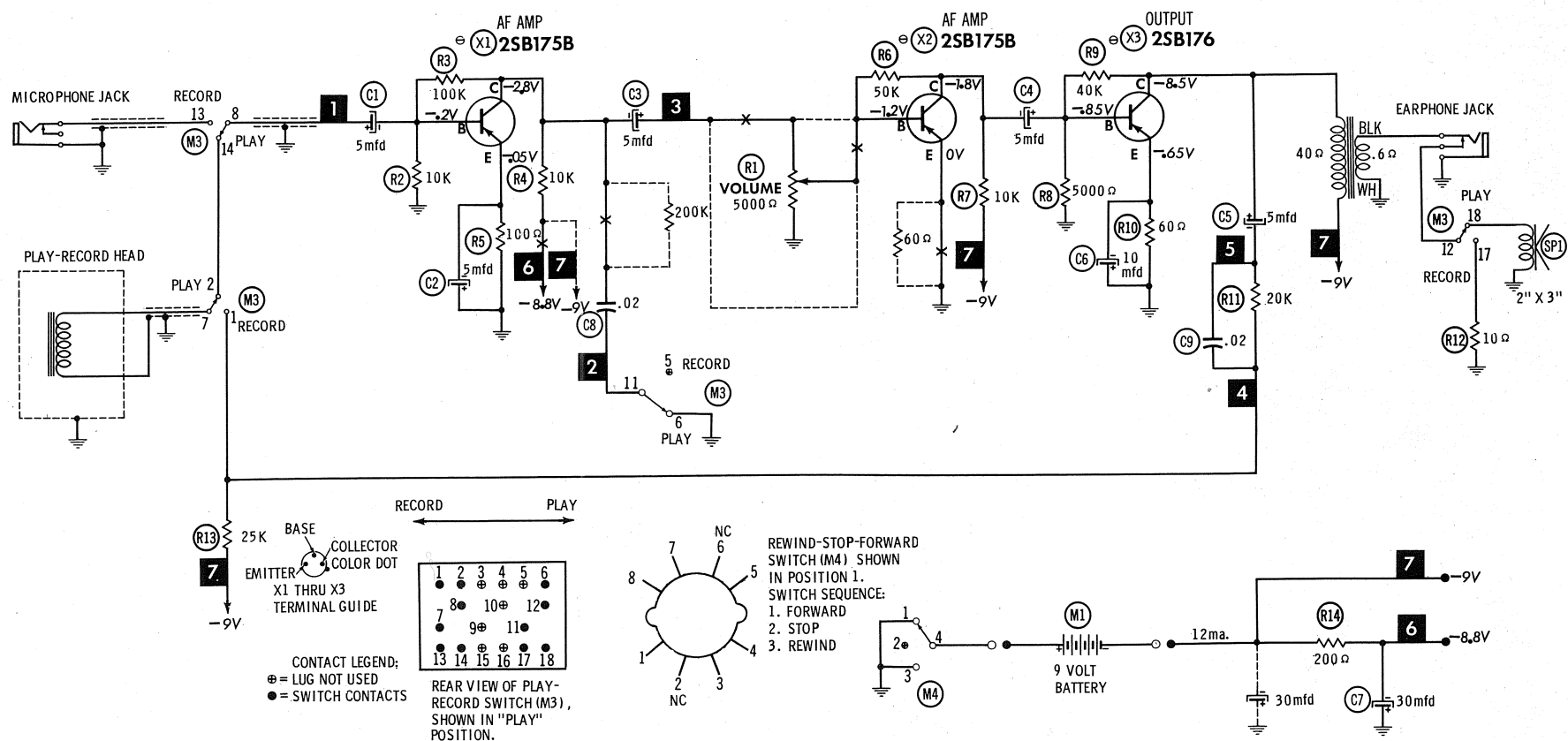
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401 or 8421
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor-Unshielded) 8429 (Two Conductor-Shielded) 8419 (Three Conductor-Shielded)



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PRINTED BOARD

CHASSIS - BOTTOM VIEW



SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

- DC voltage measurements taken with vacuum tube voltmeter.
- Socket connections or transistor terminals are shown as bottom views.
- Measured values are from socket pin or terminal to common ground.
- Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
- Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with **CIRCUITRACE®**

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RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

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RA-11